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ABSTRACT

A study was conducted to determine if different benefits would accrue to Colorado graduates of Associate of Applied Science Degrees (AAS), Associate of Occupational Studies Degrees (AOS), and vocational certificate programs if the programs were of equal length, occupational curriculum content, and quality of instruction. As a part of the study, an instrument for statewide use in assessing employer attitudes was developed. One hundred thirty-eight individuals representing a variety of employing agencies were surveyed. Survey results indicated that, when given two hypothetical job applicants with similar qualifications except that one applicant had an AAS degree and one had a two-year vocational certificate, 51 percent of respondents selected the AAS degree, 37 percent selected the certificate, and 12 percent had no preference for hiring. Also, when respondents were asked to rank hypothetical individuals for hiring likelihood and promotion potential, individuals with the AAS degree were ranked significantly higher than those with either the AOS degree or the two-year certificates for both hiring and promotion. (Survey instruments are appended.) (LRA)

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# COMPARISON OF THE RELATIVE BENEFITS OF ASSOCIATE DEGREES VERSUS CERTIFICATES IN VOCATIONAL EDUCATION

**Final Technical Report**

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**Project RCU-R-80-7**

Sponsored by

**The Colorado State Board for Community Colleges and Occupational Education**

The Department of Vocational Education
Colorado State University
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# I. INTRODUCTION

## The Problem and Objectives

In 1979, the state of Colorado had 22 community colleges and area vocational schools which offered over 500 post-secondary vocational education programs. Fifty-one percent of the programs provided graduates with vocational certificates as evidence of successful completion of an occupational program. Twenty-three percent of the programs provided graduates with an associate degree as similar evidence, and another 26 percent of the programs offered the students the option of attaining either the degree or the certificate.

In Colorado, the Associate of Applied Science (AAS) Degree was awarded upon completion of a two-year community college occupational program. Curriculums for the AAS programs have been heavily vocational in content, though a 1978 revision to Colorado State Board for Community Colleges and Occupational Education (SBCCOE) policies required that a minimum of 18 quarter credit hours or 12 semester hours of general education be included.

Certificates were awarded upon completion of a vocational program which was usually less than two years in length, although the program could be two years in

duration or longer. The curriculum for certificate programs was not required to contain any minimum amount of general education.

The state of Colorado had considered the usefulness of an alternate credential for vocational programs: the Associate of Occupational Studies (AOS) Degree. This degree would be awarded upon completion of a two-year community college program. The curriculum would not be required to contain a general education component.

Society in general viewed the possession of either a certificate or a degree as evidence of competence in a specialized field (Thornton, 1972). However, inevitable confusion existed as to the relative merits of different credentials which might be earned by students. With two types of credentials currently offered to Colorado vocational graduates (certificates and AAS Degrees) and a third one possible (the AOS Degree), there were several questions to be answered. The level of awareness of program curriculum contents by potential employers was unknown, nor was it known whether potential employers would be more likely to employ graduates with one kind of credential over another if graduates had similar qualifications in other respects. There was a need to know whether different benefits would accrue to graduates of AAS, AOS, and certificate programs if the programs were of equal length, occupational curriculum content, and quality of instruction.

A project to investigate answers to these and other questions was undertaken by the Department of Vocational Education, Colorado State University. Objectives were to:

1. Determine whether any significant differences existed in the way employers viewed and/or accepted vocational program graduates with AAS/AOS degrees versus those with certificates.

2. Determine whether any significant differences existed in the acceptability to employers of vocational program graduates with the AOS Degree versus those with other associate degrees.

3. Develop a tested, valid, reliable instrument for statewide use in assessing employer attitudes toward graduates with differing credentials.

4. Determine the relative benefits, if any, to vocational program graduates of associate degrees versus certificates when programs were of equal occupational content and quality.

5. Determine the relative benefits, if any, to vocational program graduates of the AOS Degree versus other degrees, when programs were of equal occupational content, quality, and length.

6. Complete and report on a comprehensive review of the literature concerning the relative benefits of two-year occupational degree and certificate programs.

## Abbreviations

AAS: Associate of Applied Science.

AOS: Associate of Occupational Studies.

SBCCOE: The Colorado State Board for Community Colleges and Occupational Education.

## Definitions

ASSOCIATE DEGREE: When used, referred always to a two-year occupational education program leading to an associate degree with any name.

CREDENTIAL: When used, referred to any kind of diploma, degree, certificate, or other award earned by vocational students upon completion of post-secondary studies less than the baccalaureate degree which led to entry into an occupation.

## II. PROCEDURES

Objectives one and two were to be accomplished through the development and pilot test of the instrument described in objective three. Preliminary instrument questions were developed. An advisory committee (see appendix) consisting of members from industry and education met on April 2, 1980, reviewed the preliminary questions, and suggested improvements. The questionnaire was then finalized (see appendix). An item to be used for testing content validity was included on fifty percent of the questionnaires. Distribution packets containing sets of questionnaires and mailing materials were prepared.

On April 8, 1980, 17 packets were distributed to Colorado Job Development and Placement Specialists, one packet to each specialist (see appendix). Each of the specialists was asked to mail or deliver questionnaires to 15 employers of post-secondary vocational graduates. Specialists were also asked to make one follow-up phone call to non-respondents to maximize returns and to forward completed instruments to the project director. Using this method, 138 employers from the state of Colorado were surveyed.

Completed questionnaires had responses analyzed using t-tests for differences in means of responses to key questions concerning employer attitudes about credentials. Distribution of responses and t-test results among subgroups of employers by employer education, employer position, size of business, and kind of business was determined and reported.

Objectives four and five were to be accomplished, to the extent possible, through the review of literature described in objective six. The literature review was to determine, in sum, what relative benefits were already known to exist in regard to the kinds of credentials under study.

The final report was drafted and the project advisory committee met on June 30, 1980 to review the results, suggest improvements to the report, and recommend directions for future research activity. The final report was then prepared.

## III. REVIEW OF LITERATURE

### Definition of Terms

The SBCCOE-designated standards for the AAS degree and the AOS degree were contained in SBCCOE Policy BP 9-40 (February, 1979). As defined in BP 9-40, the intent of each degree program was to prepare students for entry into employment in an occupation. The only significant difference between the two degree programs was that an AAS program was required to include a 20 percent (approximate) component of general education, and an AOS program had no general or liberal arts education requirement.

Prior to a review of nationwide research accomplished in locations where the definitions of the two degrees might differ from the Colorado definitions, it was deemed crucial to review the usage and meaning of the terms on a nationwide basis. Therefore, the literature search began with reviews of definitions of the terms "Associate Degree," "Associate of Occupational Studies Degree," "Associate of Applied Science Degree," "Certificate," and "Diploma."

Such references as Barron's Guide (Barron, 1975), The College Blue Book (1979), and the College Handbook (Matheson, 1979) yielded relatively vague definitions.

The consensus was that an associate degree (of any subtype) was awarded upon completion of a two-year program in a community college. The only source which specified associate degree subtypes at all was Barron's Guide, which indicated only that

> The Associate is the degree granted in the two-year colleges. Most colleges award either the Associate in Arts, the Associate in Science, or the Associate in Applied Science. Two-year colleges also grant certificates and diplomas. (p. x)

Barron's Guide was also the only general reference which listed the AOS Degree. Definitions of any associate degree subtypes which might have been used to distinguish one from another in the literature were not provided in any of the references.

Attempts to distinguish diploma programs from certificate programs by definition met with similar non-success. Standard reference work definitions indicated that these programs were demarcated by program length--but the definitions conflicted and/or overlapped. Barrons, e.g., indicated a diploma program was a vocational or technical program usually requiring one year, whereas the College Blue Book distinguished diploma programs as being one to two years in length and certificate programs as being less than one year in length.

Since the study concerned occupational programs, definitions of the pertinent credentials from different state boards of vocational education were also reviewed.

Typically, such definitions as were available were broad enough to leave local educational agencies considerable flexibility in program standards. Nationally, no particular consensus was noted, though most state boards indicated variations in general education components as a distinguishing criterion among the various credentials.

In Wisconsin, e.g., the Guidelines for Program Development published by the Board of Vocational, Technical and Adult Education (1968) required only "a balance between general education and occupationally-oriented subjects" (p. 12) with no specific amounts of either. At the same time, the Wisconsin Board retained full approval authority for all degree and diploma-granting programs. For approval, the Wisconsin Board indicated that vocational-technical programs must:

> . . . offer opportunity for the student to understand health and safety, the responsibilities of citizenship, and an appreciation of those things which enrich life and make it more satisfying. Without these subsidiary objectives, the student could not become completely and satisfactorily occupationally competent. (p. 40)

The Wisconsin Board then suggested general education components ranging from 15 to 60 percent of the total curriculum, depending on program and occupation type.

Only one state (New York) provided any standard for the AOS Degree. Part of the New York Commissioner of Education Regulations 52-2 (as cited in the catalog of SUNY Agricultural-Technical Institute at Alfred, p. 12) read as follows concerning the AOS Degree:

> . . . the curriculum must require a minimum of 60 semester credit hours or the equivalent for completion and may consist solely of specialized course work and related subjects. (1979)

The state of New York, as did most other states, distinguished between the AOS, AAS, and other associate degrees by prescribing different amounts of general education for different degrees. The Associate Chancellor for Community Colleges in New York verified via telephone conversation and letter that, in New York, the AOS Degree "shall not include courses in the liberal arts and sciences" (Robbins, 1980).

## Review of Institutions Awarding Associate Degrees

To better determine actual usage of occupational degrees and certificates, it was decided to review catalogs from a nationwide sample of post-secondary institutions which conducted occupational education programs. A random sample of 126 institutions which offered associate degrees was drawn with at least one institution from each state included in the sample. A current catalog was obtained from each of the institutions,

and within each catalog one occupational program was selected at random from listings of occupational associate degree programs, certificate programs, and diploma programs. The programs selected were reviewed for general education content. (See appendix for list of post-secondary institutions selected.)

The catalog review indicated that the associate degree awarded for completion of a two-year occupational program was the AAS in 66.7 percent of the schools. The AOS Degree was awarded in 2.4 percent of schools (all in New York). The remaining schools awarded associate degrees with a variety of names to occupational program graduates. These were:

| | | |
|---|---|---|
| 1. | Associate of Science Degree | 10.3% |
| 2. | Associate Degree | 10.3% |
| 3. | Associate of Arts Degree | 6.3% |
| 4. | Associate of Applied Arts Degree | 0.8% |
| 5. | Associate of Engineering Technology Degree | 0.8% |
| 6. | Associate of Industrial Technology Degree | 0.8% |
| 7. | Associate of Occupational Technology Degree | 0.8% |
| 8. | Associate of Technical Arts Degree | 0.8% |

Randomly selected occupational associate degree programs in the sampled institutions were reviewed for required general education content in the curriculum.

The percentage of general education required by the institutions ranged from a low of four percent to a high of 70 percent in AAS programs. The median general education requirement for the AAS Degree was 21.6 percent.

The New York institutions which offered AOS Degree programs were required to have no liberal arts or sciences. However, one school did require a three percent component of general education in another subject. Of schools awarding associate degrees other than the AAS or AOS for occupational graduates, the required general education component ranged from 10 to 44 percent, with a median requirement of 24.7 percent general education.

It therefore appeared that, on a nationwide basis, a perception of the AAS Degree or any other associate degree in an occupational field might be that those were degrees awarded upon completion of a two-year program containing occupational elements with a mixture of general education of about one-fifth to one-fourth.

The review of catalogs indicated that, on a nationwide basis, some confusion might exist between definitions of certificate programs and diploma programs. Fifty-four percent of the institutions reviewed awarded certificates for occupational studies up to two years and 23 percent awarded diplomas for (essentially) the same thing. Of the programs awarding certificates, 15 percent required studies of less than one year, 75 percent required

studies for one to two years, and 10 percent required a full two years of study. Of programs awarding diplomas, 10 percent required less than one year of study, 41 percent required one to two years of study, and 48 percent required two years of study.

Both kinds of programs usually, but not always, required some general education as a component of the overall program. Certificate program general education requirements ranged from 33 percent (in one percent of programs) to none (in one-fourth of programs), with a median general education requirement of 9.9 percent. Diploma program general education requirements ranged from 32 percent (in three percent of programs) to three percent (in seven percent of programs), with a median requirement of 18.5 percent.

A reasonable conclusion about public perception of certificate programs and diploma programs would, therefore, have been that an individual asked might not recognize either one but would probably expect either one (if recognized) to contain some general education as part of the curriculum.

## Associate Degree, Certificate and Diploma Benefits

The third phase of the literature review was conducted to determine what benefits might accrue from associate degree and certificate programs, with comparisons

made among these programs. Because of the lack of nationwide consensus on distinguishing occupational associate degrees from other kinds of associate degrees, it appeared pertinent to review literature on any/all types of associate degree programs and their benefits.

The literature was rife with information on the benefits of education in general, and of the benefits of greater amounts of education (compared with lesser amounts). An abundance of reports were also available describing the benefits of associate degrees--i.e., two years of additional education beyond the high school--to their recipients. The benefits of "additional education" were generally well known and could be classified in categories grouped either by private or social economic benefits.

However, since this study was limited to comparing the benefits of one kind of vocational education program versus another (as opposed to comparing more versus less education) the majority of this kind of literature was of no value. A computer-assisted search of literature in the ERIC system was conducted by asking for all reports concerning benefits tied to vocational education and either certificates, certification, or associate degrees. Similar searches were made in the Cumulative Index to Journals in Education and Dissertation Abstracts International.

**Employability/Promotability Benefits**

A prime concern of vocational educators has been the employability of program graduates. As a consequence, the reports of research which surfaced usually dealt with employability--i.e., the advantages to graduates in the competition for jobs and for promotion on the job.

A series of follow-up studies of graduates of Montgomery Community College in Rockville, Maryland was conducted which garnered employers' perceptions of occupational associate degreed and non-degreed employees and job applicants (Armstrong, 1978; Gell and Jones, 1976; Gell, Jones and Lowe, 1975). Armstrong asked employers whether hiring and promotion preference would be given to associate degree holders over non-degreed applicants or employees. Results indicated that 44 percent of employers preferred prospective employees with a degree to those "with two years of college and no degree" (p. 5).

Armstrong questioned whether any true advantage existed for degree holders by noting that over half of employers had no preference. However, the advantage seemed clear from Armstrong's own report: almost half of employers preferred job seekers with associate degrees and the remainder had no preference. By inference, if two Montgomery Community College students, one an associate-degree holder and one a non-degreed, two-year college completer, who had otherwise equivalent qualifications, applied to any of the 44 percent who preferred

degree holders, the degree holder would seemingly have the advantage. The two earlier Montgomery Community College studies indicated essentially the same results: i.e., some employers preferred to hire applicants with associate degrees, and some had no preference (Gell, Jones, and Lowe, 1976; Gell and Jones, 1975).

Roney and Braden (1968), in an Oklahoma assessment of technical education, indicated a high demand for associate degreed graduates by employers. The reasons given for this were primarily due to reassignment of tasks formerly accomplished by professionals to technicians. Roney and Braden cited an industrial employer preference for hiring the associate degree technician who had "greater long-range potential" and was "more versatile" than those who had received training of other types (p. 11).

There was some evidence that an associate degree (or any credential) might be viewed by employers simply as a screening device to sort among job applicants whose experiences were otherwise similar. Raymond and Sesnowitz (1975), for example, in discussing educational credentials in general cited

> . . . evidence indicating that the value placed upon a college degree in the job market is not solely a function of the increased productivity possessed by the degree holders. The degree may serve partially as an inexpensive screening device for employers. (p. 152)

Stoehr, Becker, and DeVuyst (1976) noted a similar screening effect among employers concerning another credential--the vocational diploma. In a data processing curriculum study, they noted that a diploma was "not necessary in obtaining a job, although the majority of employers state it is helpful" (p. 36).

Bethscheider (1978) also found a similar preference among employers of security specialists. His Texas study indicated that about two-thirds of employers who were surveyed "would rather hire the two-year security graduate than a non-graduate" (p. 18).

There was little interest on the part of any of the researchers cited above in comparing the benefits to graduates of similar programs with different credentials. With one exception, all of the studies indicated that a credential of some type was better than no credential at all. The exception was the results from Montgomery Community College which indicated some advantage in job-seeking of associate degree holders over community college students who had completed two years of unspecified study.

The Montgomery Community College studies were also the only ones citing associate degreed occupational graduates as possessing promotional advantages. All three studies indicated that holders of associate degrees might gain benefits resulting from a relatively greater versatility on the job. Armstrong (1978), for example, noted that almost half of employers believed employees

with associate degrees (as compared with others with two years of college) would be more likely to be assigned to tasks requiring relatively higher levels of skills. Similarly, Gell and Jones (1975) noted that 82 percent of employers thought that associate degreed holders were usually or sometimes capable of assuming more responsibility than other two-year post-secondary students. Dugger (1968) indicated that technician associate degree holders tended to be viewed by employers as more versatile and capable of more varied duties than technicians trained in other ways.

Economic Benefits

The economic benefits of education (both to individuals and to society) have been commonly cited as advantages. Again, however, most research was concerned with amounts of education measured in years, and little research compared the relative economic benefits of similar kinds of occupational education.

Roney and Braden (1968) reported on a survey of technicians in Oklahoma. They indicated that, within the same occupations, technicians who had associate degrees ranked considerably higher in actual salaries than those who did not have associate degrees after 13 years in the occupation.

Roney and Braden's findings conflict, however, with findings reported by Jencks, et.al. (1972). Reporting on

a study which controlled for cognitive skill, Jencks noted "virtually no relationship between schooling and earnings" within occupations (p. 182). Other conflicting findings were noted. Bethscheider (1978) noted no monetary advantage for two-year graduates over non-graduates in security occupations once initial employment was secured. On the other hand, Cumberland College graduates (in New Jersey) indicated in a follow-up survey that their associate degree had increased their earnings.

One study which concerned community college graduates versus baccalaureate graduates was worth noting because it concerned occupations in which either type of program graduate was prepared for similar employment. Belanger and Lavallee (1979) compared economic returns between vocational community college graduates and five-year baccalaureate graduates (in Canada) in the fields of computer science, nursing, nutrition, and social work. In all except the nursing field, they found that the baccalaureate graduate tended to have a higher private monetary return on education. The essential difference in the two kinds of educational programs for all four fields was that the baccalaureate programs included greater amounts of liberal arts and general education. An implication existed here in that there was a greater economic benefit to vocational students whose education was similar to those in other programs except for inclusion of greater amounts of general education.

## Occupational Program Coordination

One benefit to both graduates of vocational programs --and to educational systems as well--appeared to accrue from a greater degree of coordination between educational programs--in particular the kind of coordination resulting from efforts to improve articulation between programs in related occupations. Rainey (1975), along with Roney and Braden (1968) cited increases in technology and job complexity as leading to needs for continued and recurrent education of the work force. Rainey indicated that increasing numbers of students tended to move from education to employment on a temporary basis after receiving certification or degrees. Some returned at later dates to upgrade occupational knowledge and others returned to work toward baccalaureate degrees. Many students (and employers), according to both reports, perceived added education as leading to assumption of more complex duties and upward mobility in employment.

Roney and Braden, along with Cipriano (1980) complained that because of lack of articulation and/or coordination among schools offering different credentials, students were often denied the right to continue their education without penalty. In referencing the nation's technical-occupational schools and community colleges, Cipriano indicated that neighboring schools offering degree and non-degree programs often worked in isolation

rather than jointly, even when both schools provided equivalent post-secondary occupational education. A student graduating and entering employment, e.g., with a certificate from a technical school has often been dismayed to discover upon later seeking an associate (or baccalaureate) degree in the same field that none of the previous technical education "counted" at the next school. The problem appeared to be particularly prevalent in the technical, business, and allied health fields where occupations themselves were often articulated from the entry level positions to more advanced levels based, in part, on amounts of education.

Roney and Braden recommended that the state of Oklahoma provide the added benefits of a statewide articulated occupational education system. Indicating that lack of such a vertically structured and coordinated system unduly penalized both high school and post-secondary occupational graduates, they recommended that Oklahoma develop an

> . . . open-ended system of post-high school occupational education with entry and exit possible at all levels up to and including the baccalaureate degree. Developing such a system would perhaps do more to build a solid base for occupational education than any other action the state could take at this time. An open-ended occpational education system would attract many capable young people and adults who, because of economic reasons, or because of special interests, want to prepare for a technical occupation, obtain employment, and, at some later time, continue their formal education. Even though the technical training required

> for many of today's emerging occupations is specialized in nature, much of it is definitely college level. (p. 6)

Cipriano (1980) indicated that horizontal coordination (i.e., between similar schools offering similar training but different credentials) would be beneficial to both students and public educational systems. He recommended transfer of credit to allow advanced standing of vocational-technical school graduates in community colleges.

Gillie, Mann, and Basualdo (1973) stressed the importance to technical students of programs which were articulated enough to allow continuing education without penalty. Their follow-up study of over 1000 technical associate degree graduates revealed that more than one-third were continuing their technical education or had already done so. Without a statewide system of vertical program articulation such efforts by vocational graduates would have been severely hindered.

Kenneke, Nystrom, and Stadt (1973) also emphasized the importance of articulation between schools without reducing the primary emphasis on satisfying the needs of potential employers of vocational graduates. In their view, the prime concern was to provide the greatest benefit to the greatest number of students. Indicating vocational agricultural programs as often leading the way in between-school vertical articulation without sacrificing the employability of program graduates, Kenneke et.al. cited an agricultural educator:

> Community and junior colleges which offer vocational and technical education in agriculture have more than a passing concern with articulation problems. Since these institutions offer "transfer" courses in addition to career-oriented courses, they must develop an articulation program with four-year institutions. Equally important is the articulation that should be developed between post-secondary programs in agriculture and the vocational agriculture programs in secondary schools. No post-secondary program can survive the scrutiny of vocational educators and employers unless it is articulated with the demands and needs of the business world. (Hemp, 1970, as cited in Kenneke et.al., 1973, pp. 25 and 26).

## Literature Summary and Conclusions

Nationwide practice in the design of curriculums leading to associate degrees indicated that, with the exception of the AOS Degree, the curriculums were about one-fifth general education and four-fifths vocational or vocationally-related subjects. Certificate (and diploma) programs were usually less than two years in length and contained a smaller proportion of general education than associate degree programs. The most commonly used title for the vocational two-year degree was the AAS Degree. The AOS Degree was awarded only in New York schools to students completing two-year vocational curriculums with no general education included.

The literature was limited in scope and applicability to the problem of comparing advantages or disadvantages of similar vocational programs. Some studies were noted

which presented minimal evidence that an associate degree was perceived by employers as better than "other college" in the competition for employment. The scope of those studies was limited, however, to a few geographical areas and occupations and did not provide strong evidence which could be generalized to broader populations.

Some conflicting evidence was noted on monetary benefits to individuals having an associate degree as compared to those in the same occupation who did not. No conclusions could be drawn from the reports.

Several writers indicated that the kind of credential possessed by an individual was less important than benefits resulting from structuring vocational programs on state-wide bases to allow educational exit and reentry without penalizing individuals. Recommendations were made to coordinate programs in such a fashion that credit for studies in vocational-technical schools now offering degrees would be transferable to (and acceptable in) associate degree programs. Benefits of more closely articulating vocational-technical programs on a vertical basis were noted: students would find the return to school for occupational upgrade and lifelong learning to be eased.

Objectives four and five were not totally met by the limited scope of previous research. It remained unknown as to which credential (the certificate, the AOS Degree, or the AAS degree) would be more beneficial when programs were of equal length, occupational content, and quality.

## IV. SURVEY RESULTS

### Respondent Characteristics

The 138 individuals selected by Job Development Specialists to be surveyed represented a variety of employing agencies. These agencies were of the following general types:

| | |
|---|---|
| Manufacturing | 31 (23%) |
| Retail/wholesale distribution | 24 (17%) |
| Utilities, mining and energy | 14 (10%) |
| Health services and hospitals | 14 (10%) |
| Accounting, finance and insurance | 12 (9%) |
| Education and government | 10 (7%) |
| Construction, repair and maintenance | 9 (7%) |
| Engineering, research and development | 7 (5%) |
| Unreported | 17 (12%) |

The respondents reported working in various jobs or pcsitions of the following kinds

| | |
|---|---|
| Personnel and human resources | 76 (56%) |
| General manager, vice president, president or owner | 26 (19%) |
| Branch, office and middle management | 14 (10%) |
| Production supervision | 12 (9%) |
| Educational, technical, engineering supervision | 8 (6%) |
| Unreported | 2 (1%) |

The respondents represented business or industries which ranged by organizational sizes (by number of employees) from 3 employees to 30,000 employees. The organizations were grouped for ease in reporting, and organizational sizes were as follows:

| | |
|---|---|
| 1 to 35 employees | 24 (18%) |
| 36 to 100 employees | 26 (19%) |
| 101 to 500 employees | 36 (26%) |
| 501 to 1000 employees | 10 (7%) |
| 1001 to 30,000 employees | 21 (15%) |
| Unreported | 21 (15%) |

Respondents' educational levels were as follows:

| | |
|---|---|
| Less than high school | 1 (1%) |
| High school | 17 (12%) |
| Some college, no degree | 26 (19%) |
| Associate degree | 5 (4%) |
| Baccalaureate degree | 52 (38%) |
| Graduate degree(s) | 34 (25%) |
| Unreported | 3 (2%) |

Respondents were also asked to estimate the approximate percentage of their organizations' employees who were required to have two years of post-secondary occupational education. Estimates by the respondents were as follows:

| | |
|---|---|
| 0-25% of employees who were required to have two years occupational education | 51 (37%) |
| 26-50% of employees who were required to have two years occupational education | 46 (33%) |
| 51-75% of employees who were required to have two years occupational education | 29 (21%) |
| 76-100% of employees who were required to have two years occupational education | 11 (8%) |
| Unreported | 1 (1%) |

## Respondent Credential-Pair Hiring Preferences

### General

Respondents were provided with three pairs of hypothetical employment applicants who differed only in the kind of two-year post-secondary vocational credential they possessed, and then asked to select one from each pair for hiring. Overall responses to the choices, for each hypothetical pair of individuals, is indicated in Table 1.

As can be seen in Table 1, when employers were asked to choose for hiring between individuals having an AAS Degree or a certificate, approximately two-thirds either preferred the AAS Degree or had no preference. Similarly, when asked for preferences between individuals having an AAS Degree or an AOS Degree, about two-thirds either preferred the AAS Degree or had no

TABLE 1. VOCATIONAL CREDENTIAL HIRING PREFERENCES BY EMPLOYERS.

| Hiring Preference | Number of Respondents | Percent of Respondents |
|---|---|---|
| AAS Degree Preferred Over Two-Year Certificate | 71 | 51 |
| Two-Year Certificate Preferred Over AAS Degree | 51 | 37 |
| No Preference Between AAS Degree and Two-Year Certificate | 16 | 12 |
| AAS Degree Preferred Over AOS Degree | 68 | 49 |
| AOS Degree Preferred Over AAS Degree | 51 | 37 |
| No Preference Between AAS Degree and AOS Degree. | 19 | 14 |
| AOS Degree Preferred Over Two-Year Certificate | 58 | 42 |
| Two-Year Certificate Preferred Over AOS Degree | 44 | 32 |
| No Preference Between AOS Degree and Two-Year Certificate | 36 | 26 |

preference. Finally, 68 percent of employers preferred the AOS Degree over the certificate or had no preference.

Respondents were grouped by various categories, and chi-square contingency tests were made of pair preferences for each set of subgroups. Two-year certificate versus AAS Degree, AAS Degree versus AOS Degree, and two-year certificate versus AOS Degree hiring preferences among subgroups resulted in chi-square statistics as indicated in Table 2.

**Pair-Preference Differences by Type of Organization**

Significantly high chi-square statistics resulted when employers were grouped by type of organization. Inspection of the raw data (see Table 3) for the subgroups of organization types revealed that 80 percent of all respondents in the retail and wholesale distribution, mining, energy, engineering, research and development, health, finance, accounting and insurance occupations preferred to hire AAS Degree holders over certificate holders.

Conversely, 71 percent of respondents in manufacturing, construction, repair and maintenance occupations preferred hiring certificate holders over AAS Degree holders. Respondents in education, government and utilities occupations were evenly divided between AAS Degree and certificate holders.

TABLE 2. RESULTS OF CHI-SQUARE CONTINGENCY TESTS FOR HIRING PREFERENCE BY SUBGROUPS OF EMPLOYERS.

| Respondents Subgrouped By | Chi-Square Statistic[a] | | |
|---|---|---|---|
| | Certificate Vs. AAS Preference | AOS Vs. AAS Preference | Certificate Vs. AOS Preference |
| Type of Organization | 28.3* | 30.0* | 13.0 |
| Type of Position | 18.0* | 18.0 | 8.1 |
| Organizational Size | 2.7 | 5.5 | 4.2 |
| Educational Level | 19.2* | 20.0* | 21.2* |
| Percentage of Employees Requiring Two Years of Post-Secondary Vocational Education | 4.1 | 3.2 | 2.4 |

[a]Larger values of chi-square statistics indicate greater disparities from proportionally even preference distributions.

*Significant at or beyond the 0.05 level of confidence.

TABLE 3. EMPLOYER PREFERENCES BY TYPE OF ORGANIZATON AND EDUCATIONAL LEVEL.

| | AAS-Certificate Preference | | AAS-AOS Preference | | AOS-Certificate Preference | |
|---|---|---|---|---|---|---|
| | AAS | Certificate | AAS | AOS | AOS | Certificate |
| **Type of Organization** | | | | | | |
| Retail/Wholesale Distribution | 17 | 4 | 16 | 5 | 10 | 6 |
| Manufacturing | 8 | 18 | 7 | 18 | 12 | 11 |
| Mining/Energy | 6 | 0 | 6 | 0 | 5 | 1 |
| Utilities | 3 | 3 | 4 | 2 | 4 | 2 |
| Government | 1 | 1 | 2 | 0 | 2 | 1 |
| Education | 2 | 2 | 1 | 2 | 2 | 1 |
| Repair and Maintenance | 0 | 3 | 0 | 3 | 0 | 3 |
| Construction | 2 | 4 | 2 | 4 | 1 | 5 |
| Engineering, Research and Development | 6 | 1 | 6 | 1 | 3 | 1 |
| Health and Hospitals | 10 | 4 | 10 | 4 | 8 | 3 |
| Accounting and Finance | 7 | 3 | 4 | 5 | 4 | 3 |
| Insurance | 2 | 0 | 2 | 0 | 1 | 0 |
| **Educational Level** | | | | | | |
| Less Than High School | 0 | 1 | 0 | 1 | 0 | 1 |
| High School | 2 | 14 | 2 | 14 | 1 | 13 |
| College-No Degree | 13 | 8 | 11 | 9 | 13 | 7 |
| Associate Degree | 4 | 1 | 4 | 1 | 5 | 0 |
| Baccalaureate Degree | 29 | 17 | 28 | 17 | 21 | 13 |
| Graduate Degree(s) | 23 | 9 | 23 | 8 | 18 | 9 |

Data from the same set of subgroups of respondents revealed that the AAS Degree was preferred over the AOS Degree by 79 percent of the respondents in retail and wholesale distribution, mining, energy, government, engineering, research and development, health, insurance, and utilities occupations. The AOS Degree was preferred over the AAS Degree by 63 percent of respondents in manufacturing, construction, repair and maintenance occupations. Respondents in education, accounting, and finance were evenly divided between the AOS Degree and the AAS Degree.

**Pair-Preference Differences by Respondents' Educational Level**

Inspection of raw data (see Table 3) used for the chi-square testing revealed that, among respondents with high school or less education, the certificate was preferred over the AAS Degree (by 88 percent of respondents) and the certificate was preferred over the AOS Degree (by 93 percent of respondents).

Of the respondents who had some college through graduate degree(s), the AAS Degree was preferred over the certificate (by 73 percent of respondents), and the AOS Degree was preferred over the certificate (by 59 percent of respondents).

Other subgroupings of respondents (i.e., by position type, company size, and estimated percent of employees requiring two years of vocational education) resulted in fairly proportional preference distributions between pairs for the three sets of choices.

## Hiring and Promotion Potential Rankings

### General Rankings

Respondents were asked to rank holders of all three kinds of credentials (AOS Degree, AAS Degree, and two-year certificate) both for hiring purposes and for likelihood of future promotion. Ranks from respondents for hiring and promotion purposes are listed in Table 4.

Two-tailed t-tests for significance of differences in mean rankings of the three credentials were accomplished for each possible pair of credential rankings listed in Table 4. AAS Degree holders were ranked higher than certificate holders for hiring ($t=3.16$, significant beyond the 0.10 level of confidence); AAS Degree holders were ranked higher than certificate holders for promotion potential ($t=5.09$, significant beyond the 0.10 level of confidence.)

AAS Degree holders were ranked higher than AOS Degree holders for hiring ($t=2.56$, significant beyond the 0.10 level of confidence); AAS Degree holders were ranked higher than AOS Degree holders for promotion potential ($t=2.65$, significant beyond the 0.10 level of confidence).

TABLE 4. EMPLOYER RANKINGS OF VOCATIONAL CREDENTIAL HOLDERS FOR HIRING AND PROMOTION POTENTIAL.

| Individual Credential | Rank for Hiring[a] | | Rank for Promotion Potential[a] | |
|---|---|---|---|---|
| | Median | Mean | Median | Mean |
| 1. AAS Degree Holder | 1.42 | 1.72 | 1.30 | 1.62 |
| 2. AOS Degree Holder | 2.00 | 2.00 | 1.95 | 1.92 |
| 3. Two-Year Certificate Holder | 2.44 | 2.19 | 2.60 | 2.35 |

[a] Respondents ranked preferences from 1 = Highest to 3 = Lowest.

AOS Degree holders were ranked higher than certificate holders for hiring (t=1.97, significant beyond the 0.10 level of confidence); AOS Degree holders were ranked higher than certificate holders for promotion potential (t=4.24, significant beyond the 0.10 level of confidence).

Analysis of variance testing was accomplished for respondents' subgroup mean hiring and promotion potential rankings. Significant differences in mean rankings among certain subgroups resulted (see Table 5).

## Rank Differences by Type of Organization

The respondents' overall mean rank for hiring individuals with the AAS Degree was 1.72. With individuals subgrouped by type of organization, ex-post facto inspection of means indicated that respondents employed in education, construction, repair and maintenance occupations ranked AAS Degree holders lower for hiring than did all respondents; those employed in mining, energy and insurance occupations ranked AAS Degree holders higher for hiring than did all respondents.

The respondents' overall mean rank for promotion of individuals with the AAS Degree was 1.62. Ex-post-facto inspection of means indicated that respondents employed in manufacturing, repair and maintenance occupations ranked AAS Degree holders lower for promotion potential

TABLE 5. ANALYSIS OF VARIANCE RESULTS FOR HIRING AND PROMOTION POTENTIAL MEAN RANKS BY SUBGROUPS OF RESPONDENTS.

| | F Statistic[a] | | | | | |
|---|---|---|---|---|---|---|
| | Hiring Rank | | | Promotion Potential Rank | | |
| Respondents Grouped By | Certificate | AAS | AOS | Certificate | AAS | AOS |
| Type of Organization | 1.91* | 3.16* | 1.08 | 2.41* | 2.36* | 0.59 |
| Type of Position | 1.33 | 2.15* | 0.68 | 1.12 | 2.26 | 0.61 |
| Organizational Size | 0.99 | 0.98 | 0.14 | 2.22 | 1.66 | 1.44 |
| Educational Size | 6.54* | 6.42* | 0.84 | 10.72* | 6.93* | 0.69 |
| Percentage of Employees Requiring Two Years of Post-Secondary Vocational Education | 1.86 | 2.74* | 0.36 | 2.32 | 4.19* | 0.43 |

*Significant at or beyond the 0.05 level of confidence.

[a]Larger values of the F statistics indicate greater disparities among subgroups on mean rankings.

than did all respondents; those employed in retail and wholesale distribution, mining, energy, and health occupations ranked AAS Degree holders higher for promotion potential than did all respondents.

The respondents' overall mean rank for hiring certificate holders was 2.19. Ex-post-facto inspection of means indicated that respondents in manufacturing, repair and maintenance occupations ranked certificate holders higher for hiring than did all respondents; those in mining, energy, government, research and development, and engineering occupations ranked certificate holders lower for hiring than did all respondents.

The respondents' overall mean rank for promotion of certificate holders was 2.35. Ex-post-facto inspection of means indicated that respondents in manufacturing, repair, maintenance, accounting, finance and insurance occupations ranked certificate holders higher for promotion potential than did all respondents; those in mining, energy and health occupations ranked certificate holders lower for promotion than did all respondents.

**Rank Differences by Respondents' Educational Level**

The greatest differences in mean hiring rank and promotion potential rank occurred when respondents were subgrouped by educational level (see Table 6). Within this group, ex-post-facto inspection of means indicated

TABLE 6. RANKINGS OF HIRING AND PROMOTION POTENTIAL PREFERENCES BY RESPONDENTS' EDUCATIONAL LEVEL.

| Respondents' Educational Level | Mean Ranks[a] | | | | | |
|---|---|---|---|---|---|---|
| | Hiring Preference | | | Promotion Preference | | |
| | AAS | AOS | Certificate | AAS | AOS | Certificate |
| High School or Less | 2.73 | 2.07 | 1.19 | 2.71 | 2.07 | 1.20 |
| Some College, No Degree | 1.64 | 1.91 | 2.45 | 1.53 | 1.78 | 2.68 |
| Associate Degree | 1.20 | 2.00 | 2.60 | 1.20 | 2.00 | 2.80 |
| Baccalaureate and/or Graduate Degree(s) | 1.56 | 2.03 | 2.32 | 1.46 | 1.94 | 2.49 |
| All Respondents | 1.72 | 2.00 | 2.19 | 1.62 | 1.92 | 2.35 |

[a]Respondents ranked preferences from 1 = Highest to 3 = Lowest.

that those respondents who had some college, or a baccalaureate or higher degree ranked certificate and AAS Degree holders approximately the same for hiring and for promotion as did all respondents. However, those respondents who possessed the associate degree themselves ranked AAS holders significantly higher for both promotion and hiring than did those who had a high school education or less.

It was also noted that respondents as a group and in all educational subgroups except those with no college education ranked the three credentials from AAS Degree (highest) to certificate (lowest) for both promotion and hiring. But those with no college education reversed this rank order and listed certificates highest and AAS Degrees lowest for both hiring and promotion.

## Rank Differences by Respondents' Position Type

Analysis of variance indicated some differences in the way AAS holders were ranked by respondents' type of position held. The respondents' overall mean rank for hiring AAS Degree holders was 1.72, and for promotion of AAS Degree holders was 1.62. Ex-post-facto inspection of means indicated that respondents who were in the health occupations ranked AAS Degree holders higher for hiring and for promotion potential than did respondents who were production supervisors or school administrators.

### Rank Differences by Percentage of Employees Requiring Two Years of Post-Secondary Vocational Education

Some differences in the way AAS holders were ranked for hiring and promotion potential were noted when respondents were subgrouped by their estimates of the percentage of organizational employees requiring two years of post-secondary vocational education. Ex-post-facto inspection of means indicated that respondents in organizations where 51 to 75 percent of employers required two years of post-secondary vocational education ranked AAS Degree holders lower for hiring and promotion potential than did all respondents.

Analysis of variance indicated no significant differences in hiring and promotion ranks among subgroups of employers within the organization size group.

## Instrument Validation

One purpose of conducting the survey as it was done was to develop and validate an instrument. Therefore, 50 percent of the instruments contained an additional item for respondents to indicate their perceptions of the instrument contents. Responses to this final item indicated that a number of employers had difficulty in answering the two key items (numbers six and seven). Respondents typically indicated that, since

the definitions given for the two-year certificate and for the AOS Degree were identical, they were unable or unwilling to choose between or rank those two credentials.

Instrument reliability was tested by comparing responses to the two key items (numbers six and seven). As a general test, it was noted that respondents as a group selected the AAS Degree over both the AOS Degree and the certificate when paired-choices were made. The respondents also selected the AOS Degree over the certificate in paired-choices.

From this, it could be inferred that, when given all three credentials to rank for hiring, respondents as a group would rank the AAS Degree highest, followed by the AOS Degree and the certificate in that order. This was indeed the case when respondents as a group were measured. The mean rankings by all respondents for the three credentials were as follows:

AAS Degree.....1.72

AOS Degree.....2.00

Certificate.....2.19

Additionally, individuals who selected the certificate over the AAS Degree for question six were tested for their ranking of the certificate on question seven and determined to have given certificates a mean ranking of 1.24 (the highest rank for that group). Those who selected the AOS Degree above the AAS Degree on question six were tested for their AOS ranking on question seven

and determined to have given the AOS Degree a mean rank higher than that given the AAS Degree. Those who selected the AOS Degree above the certificate on question six were tested for their AOS Degree ranking on question seven and determined to have given the AOS Degree a mean rank higher than that given the certificate. Hence, by comparing responses to two different kinds of questions attempting to measure similar ideas, respondents were determined to have answered both questions reliably.

## V. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

### Summary of Project Objectives

**Objective Number 1**

This objective was to determine whether any significant differences existed in the way employers viewed and/or accepted vocational program graduates with AOS/AAS Degrees versus those with certificates.

Survey results indicated that, when given two hypothetical job applicants with similar qualifications except that one applicant had an AAS Degree and one had a two-year vocational certificate, 51 percent of respondents selected the AAS Degree, 37 percent selected the certificate, and 12 percent had no preference for hiring. Also, when respondents were asked to rank hypothetical individuals for hiring likelihood and promotion potential, individuals with the AAS Degree were ranked significantly higher than those with either the AOS Degree or the two-year certificates for both hiring and promotion.

Survey results also indicated that, when given two hypothetical job applicants with similar qualifications except that one applicant had an AOS Degree and one had a two-year vocational certificate, 42 percent of respondents selected the AOS Degree, 32 percent selected the

certificate, and 26 percent had no preference for hiring. Also, when respondents were asked to rank hypothetical individuals for hiring likelihood and promotion potential, individuals with the AOS Degree were ranked significantly higher than those with the certificate for both hiring and promotion.

Differences in pair-preferences and rankings were noted when respondents were grouped by occupation and educational level. In pair-preference selections, respondents employed in occupations associated with trades and industry selected certificate holders above both AOS Degree holders and AAS Degree holders. These same respondents also ranked the AAS Degree lowest and the certificate highest for both promotion and hiring.

Respondents who had no college education selected certificate holders above both AOS Degree holders and AAS Degree holders. These same respondents also ranked the AAS Degree lowest and the certificate highest for both promotion and hiring.

**Objective Number 2**

This objective was to determine whether any significant differences existed in the acceptability to employees of vocational program graduates with the AOS versus those with other associate degrees.

Survey results indicated that, when given two hypothetical job applicants with similar qualifications except that one applicant had an AOS Degree and had an AAS Degree, 49 percent selected the AAS Degree, 37 percent selected the AOS Degree, and 14 percent had no preference for hiring. When respondents were asked to rank hypothetical individuals for hiring likelihood and promotion potential, individuals with the AOS Degree were ranked significantly lower than those with the AAS Degree for both promotion and hiring.

Differences in pair-preferences and rankings were noted when respondents were grouped by occupation and educational level. In pair-preference selections, respondents employed in occupations associated with trades and industry selected AOS Degree holders above AAS Degree holders. Those same respondents also ranked AOS Degrees above AAS Degrees for both promotion and hiring.

Respondents with no college education ranked AOS Degrees for both promotion and hiring, and in pair-preference selections, selected AOS Degree holders above AAS Degree holders.

Objective Number 3

This objective was to develop a tested, valid, reliable instrument for future statewide use in assessing employer attitudes toward graduates with differing credentials.

Of the respondents who returned surveys containing the validation question, 87 percent indicated no difficulty with understanding the purpose of the two key questions. Responses to questions six and seven indicated that the instrument would have a reasonable degree of reliability if the questions remained essentially as they were written.

A number of respondents replied with comments that, since the definitions of the two-year vocational certificate and the AOS Degree were identical, they could not or would not make choices. Therefore, one problem existed within the original instrument which could have affected the responses to the key questions.

**Objective Number 4**

This objective was to determine the relative benefits of associate degrees versus the certificate, when programs were of equal occupational content and quality.

This objective was to be conducted through review of the literature as well as through the pilot survey. The literature had minimal evidence that AAS (or other associate) Degree programs were more beneficial than other programs because preference would be given by some employees to degree holders. The survey provided additional evidence that this would be the case--i.e., the survey indicated that most employers preferred the AAS

graduate over a graduate with a certificate. Most employers surveyed also believed that individuals with AAS Degrees were more likely to be promoted than those with other credentials.

At this point, it would be of value to note that survey respondents were asked for comments as to why they had particular preferences. More than half of the respondents took the opportunity and commented. Their remarks were grouped into similar categories of responses, with four categories resulting (see appendix). The (summarized) response "general education is useful in rounding out an individual, improving an individual's communications and mathematics skills, and making individuals easier to work with," was subscribed to by almost half of commenters. Since the only differences between the AAS Degree and other two choices respondents had was that the AAS Degree contained more general education, it seemed that AAS Degree holders had the advantage, from the perception of employers, because they received more general education.

It was also worthy of additional mention that the AAS Degree holders were at a disadvantage when seeking employment with two groups of employers: those who had never been to college, and those in the trades and (manufacturing) industrial occupations.

**Objective Number 5**

This objective was to determine the relative benefits to vocational program graduates of the AOS Degree versus other associate degrees when programs were of equal occupational content, quality, and length.

The literature indicated no benefits or disadvantages of the AOS Degree. However, the pilot survey, as previously noted, revealed that the AOS Degree was not ranked as highly as the AAS Degree by most employers. The exceptions to this were among employers who had never attended college or who were employed in trade and (manufacturing) industrial occupations.

**Objective Number 6**

This objective was to complete and report on a comprehensive review of the literature concerning the relative benefits of two-year occupational degree and certificate programs.

The literature review was completed and reported as part of this report (Section II).

## Conclusions

The survey indicated that, of the three credentials, the AAS Degree was the most preferred by employers and the two-year vocational certificate was the least preferred. This preference was particularly strong among respondents who had received some college education (eighty-seven percent of the respondents reported having some college education).

From this point of view it was concluded that most employers who had received some college education would tend to prefer AAS Degree holders over graduates of other programs for both hiring and promotion.

The exception to this would be that in certain occupations--particularly those in the construction, manufacturing, industrial, repair, and maintenance trades --respondents would prefer graduates with the certificates rather than with degrees. Also, respondents with no college education would have the same preference. It was reasoned that it was likely that both these latter groups consisted of the same individuals and that graduates with certificates would have the advantage over those with degrees in the trades and industrial occupations.

Many respondents noted that the AOS Degree was defined identically with the certificate. These respondents ranked the AOS Degree and certificate equally and/or refused to make a pair-choice. As a result, when mean ranks were determined for the three credentials within any group of respondents or for all respondents, the AOS Degree was always ranked second and, for hiring purposes, it was usually ranked closer to the certificate than to the AAS Degree. It was considered likely that the AOS Degree was less familiar (by name) to Colorado respondents and was correspondingly less likely to be selected as a first choice.

Therefore, it was concluded that, since no AOS programs were in operation in Colorado, there would be no real advantage to students in starting any such programs: for all groups and subgroups of respondents, another credential was preferred over the AOS Degree.

## Instrument Revision

As a result of comments and responses to the "validation" item on the survey instrument, it was determined that the definitions used in the instrument would probably affect its validity if used on a more formal basis. Therefore, the final instrument provided as a product of this project to be used in the future had revisions to the definition of the vocational certificate. The revisions, incidentally, defined the certificate more closely with actual practice.

Also, as a result of pilot test findings, some modifications were made to the respondents' demographic data section of the survey instrument.

## Recommendations

1. For two-year post-secondary vocational programs, strong consideration should be given to including sufficient general education in the curriculum to qualify the programs to award the AAS Degree (as the AAS Degree is defined by SBCCOE Policy BP 9-40). This should not be construed by the reader as a recommendation for arbitrarily increasing shorter length programs to two-year lengths solely to qualify the programs for awarding the AAS Degree.

2. Though the survey indicated a general employer preference for the AAS Degree, approximately one-third of employers preferred job-seekers who had certificates. This preference was noted particularly in manufacturing, repair, maintenance and construction occupations. Therefore, the certificate should continue to be availablle to post-secondary vocational program graduates as evidence of their occupational competence. Particular consideration should be given to the use of certificates for those occupations where employers preferred the certificates.

3. Additional surveys to complete this project should be conducted in Colorado using the revised instrument developed in this pilot study and a larger sample of employers. The survey should concentrate on hiring

practices which have actually taken place. The samples of employers should be proportionally divided among businesses and industries. The surveys should be classified by occupations of employees based on classifications similar to those used by the DOT.

4. Consideration should be given to identifying vocational programs in Colorado which are similar in content and length of time but which provide different credentials as evidence of occupational competence. Should such programs be identified, a longitudinal study of the relative benefits to graduates should be conducted. This would provide a better comparison of credential benefits upon which to base program recommendations.

5. Since the AOS Degree was ranked second by employers (i.e., above the AAS Degree by some and above the certificate by others), further study can be justified to investigate the potential of the AOS Degree as a benefit to graduates of vocational programs.

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RESEARCH PROJECT

"Comparison Of The Relative Benefits Of Associate Degrees
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April 7, 1980

Dear

The State Board for Community Colleges and Occupational Education is interested in what employers think about graduates of Associate Degree Programs and Certificate Programs. To help determine their views, a questionnaire to survey employers of vocational program graduates has been developed. We are asking for your assistance in the validation and pilot test of the instrument by administering it to 15 employers in your community.

Enclosed are 20 copies of the instrument to be tested, a suggested cover letter explaining its purpose, mailing and return envelopes, and postage stamps. Please select 15 persons responsible for hiring employees who represent either (1) the major community employers or (2) the employers of the majority of vocational graduates from your agency. To your best ability, please ensure that these persons are in agencies likely to employ post-high school vocational program graduates.

Please mail or deliver in person the questionnaires with cover letters to the individuals you select and collect the responses from them. We ask also that you make one follow-up phone call or visit to any non-responding individual ten days after the initial request. After all possible responses have been obtained, return them to us not later than May 1, 1980 in the large envelope provided. It is our hope that with your assistance we will be able to prepare a reliable, valid instrument for future use by Colorado educational agencies for program planning.

Sincerely,

Leland B. Luchsinger

Leland B. Luchsinger
Project Director

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Enclosures

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**James Nance**
Job Development and Placement Specialist
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200 W. Oak
Fort Collins, Colorado 80521

Date

Employer of Graduates
Colorado Community

Dear Employer:

In Colorado, the state agency for planning and administering vocational, technical, and occupational education is the State Board for Community Colleges and Occupational Education. The Board is concerned about the relative benefits to employers such as yourself of hiring graduates from Associate Degree and Vocational Certificate Programs. We are asking you to help establish these benefits by completing the enclosed very brief questionnaire.

You were selected as one of a very small sample of employers. Consequently, your reply is critical to the accuracy of the results. Your response will help us to establish an information base for planning future programs and modifying existing programs to provide graduates who better meet your needs. We therefore urge you to take the 5-10 minutes needed to thoughtfully answer the questions. Would you please complete the questionnaire, enclose it in the return envelope, and mail it to the job development and placement specialist who is aiding us in the project? Thank you very much.

Sincerely,

Researcher

Enclosures

# INSTRUMENT USED FOR PILOT STUDY

# PILOT INSTRUMENT

## EMPLOYER VIEWS

## ON

## POST-HIGH SCHOOL CREDENTIALS

A Study Conducted by

The Department of Vocational Education
Colorado State University

Sponsored by

The Colorado State Board for Community Colleges and Occupational Education

# PILOT INSTRUMENT

## PART I

## EMPLOYER BACKGROUND INFORMATION

1. The name of your organization is: _____

_____

2. Your position is: _____

_____

3. The number of employees in your organization is approximately _____ (number)

4. Check one item below to indicate your highest level of education.

- ☐ less than high school
- ☐ high school graduate
- ☐ some college, no degree
- ☐ associate degree
- ☐ baccalaureate degree
- ☐ graduate degree(s)

5. Of all the employees in your organization, what approximate percentage of them would you estimate require two years of vocational, occupational, or technical education beyond the high school.

- ☐ 0-25%
- ☐ 26-50%
- ☐ 51-75%
- ☐ 76-100%

## PILOT INSTRUMENT

### PART II

### EMPLOYER VIEWS ON POST-HIGH SCHOOL VOCATIONAL EDUCATION

For Part II of this questionnaire, the following definitions apply:

| | |
|---|---|
| **GENERAL EDUCATION** | Education which is specifically designed to assist individuals to assume the responsibilities which they share in common as citizens and for wholesome and creative participation in a wide range of life activities. |
| **VOCATIONAL EDUCATION** | Education which specifically prepares individuals for employment in a particular occupation not requiring the baccalaureate degree. |
| **TWO-YEAR VOCATIONAL CERTIFICATE** | A credential awarded upon completion of a two-year post-high school vocational education program with a curriculum of 95 to 100 percent vocational education. |
| **ASSOCIATE OF APPLIED SCIENCE DEGREE** | A credential awarded upon completion of a two-year post-high school vocational education program with a curriculum of approximately 20 percent general education and 80 percent vocational education. |
| **ASSOCIATE OF OCCUPATIONAL STUDIES DEGREE** | A credential awarded upon completion of a two-year post-high school vocational education program with a curriculum of 95 to 100 percent vocational education. |

6. For each of the following three pairs of credentials, assume two individuals have applied for employment. Each pair is the same except for the type of educational credential they received. For each pair, check (✓) the individual you would hire.

**First Pair**
- ☐ Two-year Vocational Certificate
- ☐ Associate of Applied Science Degree

**Second Pair**
- ☐ Associate of Occupational Studies Degree
- ☐ Associate of Applied Science Degree

**Third Pair**
- ☐ Associate of Occupational Studies Degree
- ☐ Two-year Vocational Certificate

7. Assume three individuals have applied for employment in your organization. The individuals are all the same except for the type of post-high school education they received. Each individual's credential is listed below as a separate item. All three individuals received identical vocational curriculum content and training quality during their study.

   Please rank the order of likelihood that each of the three would be hired and their future promotion potential. Use a numeral from 1 to 3 for each, with "1" indicating the highest hiring or promotion potential and "3" indicating the lowest hiring or promotion potential.

| INDIVIDUAL CREDENTIAL HOLDER | RANK FOR HIRING | RANK FOR PROMOTION POTENTIAL |
|---|---|---|
| Two-year Vocational Certificate Holder | ☐ | ☐ |
| Associate of Applied Science Degree Holder | ☐ | ☐ |
| Associate of Occupational Studies Degree Holder | ☐ | ☐ |

8. We are interested in whether the type of post-high school vocational credential is important to employers. Please indicate why you have a preference or, if not, why not.

_____

_____

## PART III

Part II of this questionnaire was to determine your attitude about persons with associate degrees and certificates. We would like to improve this questionnaire by asking your opinion about two of the items.

9. Items 6 and 7 were to determine relative benefits to graduates of three kinds of vocational programs. Please check any of the following which you feel applies to items 6 and/or 7 and add comments if you desire.

   _____I was asked to rank individuals for hiring purposes.

   _____I was asked to rank individuals for promotion purposes.

   _____I had difficulty interpreting what was being asked.

   _____Comments: _____

   _____

REVISED INSTRUMENT

REVISED INSTRUMENT

# EMPLOYER VIEWS

ON

# POST-HIGH SCHOOL CREDENTIALS

A Study Conducted by

The Colorado State Board

for

Community Colleges and Occupational Education

REVISED INSTRUMENT

## PART I

## BACKGROUND INFORMATION

1. The name of your organization is _____

2. Your position is: _____

3. The number of permanent employees in your organization is _____. (approximate number)
(Include only those in local branch).

4. Check one item below to indicate your highest level of education.

- ☐ less than high school
- ☐ high school graduate
- ☐ some college, no degree
- ☐ associate degree
- ☐ baccalaureate degree
- ☐ graduate degree(s)

5. Which of the following best describes your organization's purpose?

- ☐ manufacturing
- ☐ mining, energy development
- ☐ public utility, services
- ☐ health, hospital services
- ☐ engineering, research, consulting
- ☐ government, education
- ☐ retail/wholesale distribution
- ☐ financial, accounting, insurance
- ☐ construction
- ☐ other _____

6. The remainder of this questionnaire will ask for your views about employees in one specific occupation. Please respond only with that one occupation in mind. The occupation is:

_____
(to be completed by field surveyor)

REVISED INSTRUMENT

## PART II

## EMPLOYER VIEWS ON POST-HIGH SCHOOL VOCATIONAL EDUCATION

For Part II of this questionnaire, the following definitions apply:

| | |
|---|---|
| **GENERAL EDUCATION** | Education which is specifically designed to assist individuals to assume the responsibilities which they share in common as citizens and for wholesome and creative participation in a wide range of life activities. |
| **VOCATIONAL EDUCATION** | Education which specifically prepares individuals for employment in a particular occupation not requiring the baccalaureate degree. |
| **VOCATIONAL CERTIFICATE** | A credential awarded upon completion of a post-high school vocational education program of two years or less with a curriculum of 95 to 100 percent vocational education. |
| **ASSOCIATE OF APPLIED SCIENCE DEGREE** | A credential awarded upon completion of a two-year post-high school vocational education program with a curriculum of approximately 20 percent general education and 80 percent vocational education. |
| **ASSOCIATE OF OCCUPATIONAL STUDIES DEGREE** | A credential awarded upon completion of a two-year post-high school vocational education program with a curriculum of 95 to 100 percent vocational education. |

7. For each of the following three pairs of credentials, assume two individuals have applied for employment. Each pair is the same except for the type of educational credential they received. For each pair, check ( ) the individual you would hire.

First Pair
- ☐ Vocational Certificate
- ☐ Associate of Applied Science Degree

Second Pair
- ☐ Associate of Occupational Studies Degree
- ☐ Associate of Applied Science Degree

Third Pair
- ☐ Associate of Occupational Studies Degree
- ☐ Vocational Certificate

REVISED INSTRUMENT

8. Assume three individuals have applied for employment in your organization. The individuals are all the same except for the type of post-high school education they received. Each individual's credential is listed below as a separate item. All three individuals received identical vocational curriculum content and training quality during their study.

Please rank the order of likelihood that each of the three would be hired and their future promotion potential. Use a numeral from 1 to 3 for each, with "1" indicating the highest hiring or promotion potential and "3" indicating the lowest hiring or promotion potential.

| INDIVIDUAL CREDENTIAL HOLDER | RANK FOR HIRING | RANK FOR PROMOTION POTENTIAL |
|---|---|---|
| Vocational Certificate Holder | ☐ | ☐ |
| Associate of Applied Science Degree Holder | ☐ | ☐ |
| Associate of Occupational Studies Degree Holder | ☐ | ☐ |

9. To the best of your knowledge with respect to the identified occupation, enter the approximate percentage of your organization's current employees who hold each listed credential:

☐ % AAS Degree ☐ % Vocational Certificate ☐ % AOS Degree

10. We are interested in whether the type of post-high school vocational credential is important to employers. Please indicate why you have a preference or, if not, why not.

_____

_____

Thank you for your time and assistance. Please return this questionnaire in the stamped envelope provided.

## SUMMARIZED RESPONSES FROM SURVEY COMMENTS SECTION

Respondents who ranked the AAS Degree highest for hiring and/or promotion indicated they did so because (number responding similarly in parentheses):

1. general education was useful in rounding out or broadening an individual; improving an individual's mathematics, communications, or science skills; making an individual more flexible, adaptable, or versatile; increased "people" skills; improved ability to deal with the abstract (28).
2. they preferred workers with some general education for reasons not given (15).
3. the AAS Degree indicated persistence or high quality work (2).
4. the AAS looked or sounded better (4).
5. the AAS was required for licensure or registration (2).
6. the company required it (1).
7. the AAS was better known(1).
8. the AAS was important to knowledge of the job (1).
9. more than half of the company employees were engineers (1).
10. the respondent was interested in people with two year degree (1).
11. two years of training was important (1).

Respondents who ranked the AOS Degree highest for hiring and/or promotion indicated they did so because (number responding similarly in parentheses):

1. they preferred the emphasis to be in vocational areas or preferred programs to have high vocational content (4).
2. they preferred little or no general studies in the program (1).
3. it indicated general exposure, aptitude and/or interest on the part of the individual (1).
4. the educational background should be geared to the job (1).

5. the AOS would be more useful for building toward the B.S. Degree (1).

6. the more training an individual received, the better prepared he would be (1).

Respondents who ranked the Two-Year Vocational Certificate highest for hiring and/or promotion indicated they did so because (number responding similarly in parentheses):

1. they preferred the most specialized training (8).

2. vocational education was helpful, important, best for the job or indicated knowledge of specific skills (5).

3. organizational needs were for production people, skilled or semi-skilled people, or technically skilled people (3).

4. few jobs required extensive vocational training; the certificate program was fast and direct and allowed individuals a chance to test the field (2).

5. the certificate increased promotability or organizational value (2).

6. they preferred two years of vocational education (1).

7. the AAS Degree contained too much general education (1).

8. the individual who presented the honest case was by far the best employee (1).

Respondents who gave no preference for any one credential over another indicated they did so because ( number responding similarly in parentheses):

1. people were hired or promoted based on merit, performance, skills, experience or other factors not related to any educational credential (11).

2. hiring and/or promotion requirements varied depending on specific jobs (5).

3. attitude and/or ability to learn were more important than a credential (2).

4. concern was with quality of training and content related to organizational needs (1).

Associate Degree-Granting
Educational Institutions Reviewed
(by state)

**Alabama**

Enterprise State Junior College
Walker College

**Alaska**

Anchorage Community College

**Arizona**

Maricopa Technical Community College

**Arkansas**

East Arkansas Community College
Phillips County Community College

**California**

Los Angeles Pierce College
Ventura Community College
Cogswell College
Canada College
Santa Rosa Junior College
Cerritos Community College
San Diego Mesa College
De Anza College
El Camino College
San Joaquin Delta College
San Diego Community College

**Colorado**

Arapahoe Community College

**Connecticut**

Greater Hartford Community College
Mohegan Community College
Quinebaug Valley Community College

**Delaware**

Delaware Technical and Community College--Dover

**District of Columbia**

Washington Hall Junior College

**Florida**

Tallahassee Community College
Lake Sumter Community College
Seminole Community College
Florida Institute of Technology

**Georgia**

Brewton and Parker College
Emanuel County Community College

**Hawaii**

Kapiolani Community College

**Idaho**

College of St. Gertrude
Lewis and Clark Community College

**Illinois**

MacCormac Junior College
Highland Community College
Thornton Community College
College of DuPage
City College of Chicago--Malcolm X College

**Indiana**

Indiana University-Purdue University at Fort Wayne

**Iowa**

Western Iowa Technical College

**Kansas**

Barton County Community College
Butler County Community College

**Kentucky**

Thomas More College
Western Kentucky University
Jefferson Community College
Lexington Technical Institute

**Louisiana**

Nicholls State University
Delgado College

**Maine**

Beale Business College

**Maryland**

Prince George's Community College

**Massachusetts**

Northern Essex Community College
Quincy Junior College

**Michigan**

Washtenaw Community College
Grand Rapids Junior College
Wentworth Institute

**Minnesota**

St. Mary's Junior College
University of Minnesota Technical College-Crookston
Southwest State University

**Mississippi**

Mississippi Delta Junior College
Jones County Junior College

**Missouri**

Missouri Western State College
Three Rivers Community College
St. Louis Community College at Florissant Valley

**Montana**

Miles Community College

**Nebraska**

McCook Community College

**Nevada**

Northern Nevada Community College

**New Hampshire**

Colby-Sawyer College
New Hampshire Technical Institute

**New Jersey**

Somerset County College
Union College
Burlington County College
Ocean County College

**New Mexico**

Western New Mexico University

**New York**

SUNY Agricultural Technical College-Morrisville
SUNY Agricultural Technical College-Alfred
La Guardia Community College
Suffolk County Community College
Mohawk Valley Community College
Columbia and Greene Community College
Schenectady County Community College
Broome Community College

**North Carolina**

Cape Fear Technical Institute
Fayetteville Technical Institute
Isothermal Community College
Anson Technical College

**Oregon**

Mt. Hood Community College
Clatsop Community College
Central Oregon Community College

**North Dakota**

North Dakota State School of Science
Bismarck Junior College

**Ohio**

Ohio Institute of Technology
Lima Technical College
Michael J. Owens College
University of Cincinnati-College of Applied Science
Miami-Jacobs Junior College

**Oklahoma**

Northern Oklahoma College

**Pennsylvania**

Peirce Junior College
Bucks County Community College
Community College of Philadelphia
Robert Morris College
Montgomery County Community College

**Rhode Island**

Rhode Island Junior College

**South Carolina**

Piedmont Technical College
Florence-Darlington Technical College

**South Dakota**

University of South Dakota-Springfield

**Tennessee**

Walters State Community College
Volunteer State Community College

**Texas**

Tarrant County Junior College
Henderson County Junior College
Brazosport College
Alvin Community College
College of the Mainland

**Utah**

Utah Technical College

**Vermont**

Champlaign College

**Virginia**

Lord Fairfax Community College
Thomas Nelson Community College

**Washington**

Bellvue Community College
Gray's Harbor Community College
Olympic College

**West Virginia**

Fairmont State College
Southern West Virginia Community College

**Wisconsin**

Wisconsin Indianhead Technical Institute
Lakeshore Technical Institute
Fox Valley Technical Institute
Gateway Technical Institute
Moraine Park Technical Institute

**Wyoming**

Central Wyoming College